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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/684,244	10/13/2003	William Carl Anderson	13DV-13568-3	3014

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EXAMINER	
KIM, TAE JUN	

ART UNIT	PAPER NUMBER
3746	

DATE MAILED: 11/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	**Application No.** 10/684,244	**Applicant(s)** ANDERSON, WILLIAM CARL	
	Examiner Ted Kim	**Art Unit** 3746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 September 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *13-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *13-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *13 October 2003* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: aft mount "20" (see page 3, line 10). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

TITLE

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. Specifically, a gas turbine engine and thrust link should be referenced.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 12-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Snyder et al (6,357,220) in view of Fredd (4,117,563). Snyder et al teach a gas turbine engine comprising a thrust link 64 (note that link 64 will take on the thrust loads from the casing, alternately note that the link is a thrust link can be deemed a matter of intended use as there is no structure in the claims to differentiate the link from being a thrust link as opposed to any other type of link) comprising a first connector 79, a second connector connecting to 68, and a span section 64 extending therebetween, each said thrust link connector comprising a first side, a second side, and an opening (e.g. in 78) extending therebetween and defined by an inner surface, said inner surface comprising a plurality of threads (col. 4, lines 7+) extending radially outward into said connector opening. Snyder et al do not teach said plurality of threads comprising a cutback configured to reduce stresses induced into said plurality of threads. Fredd teaches (multiple embodiments apply but Figure 4 appears very relevant) a plurality of threads extending radially outward into said connector opening such that said threads are axially spaced substantially constant along said inner surface, said plurality of threads comprises a first thread portion positioned proximate said first side and initially engaging a threaded apparatus coupled to said connector, said plurality of threads comprising a cutback (T) configured to reduce stresses induced into said plurality of threads wherein said cutback extends through said first thread portion and configured to reduce

stresses induced into said plurality of threads; each said connector opening has a center axis of symmetry extending from said connector first side to said connector second side, said cutback oblique with respect to said center axis of symmetry; said plurality of threads comprise a first thread portion (T), each said thread comprises a crest and a root, said cutback extending through said first thread portion crest; said connector first thread portion adjacent at least one of said connector first side and said connector second side; said connector cutback comprises a first end and a second end, said cutback first end extending through said connector first thread portion, said cutback second end between said connector first thread portion and said connector second sides; said connector cutback comprises a first end and a second end, said cutback first end extending through said connector first thread portion, said cutback second end between said connector first thread portion and said connector second sides; said connector cutback first distance longer than said connector cutback second distance; said connector cutback further configured to reduce a stiffness factor of at least a portion of said plurality of threads. Fredd teaches among other advantages, an improved mechanical integrity of the joint over straight sections alone (col. 4, lines 25+) and that fewer threads can be used. It would have been obvious to one of ordinary skill in the art to employ a cutback, as taught by Fredd, to enhance the threaded connection of Snyder et al, by enhancing mechanical integrity and/or to employing fewer threads.

5. Claims 12-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Snyder et al (6,357,220) in view of either Bonstein (5,014,411) or Sugimura (4,958,973). Snyder et

al teach a gas turbine engine comprising a thrust link 64 (note that link 64 will take on the thrust loads from the casing, alternately note that the link is a thrust link can be deemed a matter of intended use as there is no structure in the claims to differentiate the link from being a thrust link as opposed to any other type of link) comprising a first connector 79, a second connector connecting to 68, and a span section 64 extending therebetween, each said thrust link connector comprising a first side, a second side, and an opening (e.g. in 78) extending therebetween and defined by an inner surface, said inner surface comprising a plurality of threads (col. 4, lines 7+) extending radially outward into said connector opening. Snyder et al do not teach said plurality of threads comprising a cutback configured to reduce stresses induced into said plurality of threads. Bonstein teaches a plurality of threads extending radially outward into said connector opening such that said threads are axially spaced substantially constant along said inner surface, said plurality of threads comprises a first thread portion 16 positioned proximate said first side and initially engaging a threaded apparatus coupled to said connector, said plurality of threads comprising a cutback (see Fig. 5) configured to reduce stresses induced into said plurality of threads wherein said cutback extends through said first thread portion 16 and configured to reduce stresses induced into said plurality of threads; each said connector opening has a center axis of symmetry extending from said connector first side 12 to said connector second side, said cutback oblique with respect to said center axis of symmetry; said plurality of threads comprise a first thread portion, each said thread comprises a crest and a root, said cutback extending through said first thread portion crest; said connector first thread portion adjacent at least one of said connector first side and said connector second side; said connector cutback comprises a first end and a second end, said cutback first end extending through said connector first thread portion, said cutback second end between said connector first thread portion and said connector second sides; said connector cutback comprises a first end and a second end, said cutback first end extending through said connector first thread portion, said cutback second end between said connector first thread portion and said connector second sides; said connector cutback first distance longer than said connector cutback second distance due to the taper outward from 16 to 12; said connector cutback further configured to reduce a stiffness factor of at least a portion of said plurality of threads. Bonstein teaches enhanced vibrational resistance due to the cutback (col. 3, lines 16-24). Sugimura teaches a plurality of threads (see col. 3, lines 41+) extending radially outward into said connector opening such that said threads are axially spaced substantially constant along said inner surface, said plurality of threads comprises a first thread portion (f1) positioned proximate said first side and initially engaging a threaded apparatus coupled to said connector, said plurality of threads comprising a cutback (f1-f7) configured to reduce stresses induced into said plurality of threads wherein said cutback extends through said first thread portion and configured to reduce stresses induced into said plurality of threads; each said connector opening has a center axis of symmetry C extending from said connector first side to said connector second side, said cutback (see line 22) oblique with respect to said center axis of symmetry C; said plurality of threads comprise a first thread portion (f1-f7), each said thread comprises a crest and a root, said cutback extending through said first thread portion crest; said connector first thread portion adjacent at least one of said connector first side and said connector second side; said connector cutback comprises a first end and a second end, said cutback first end extending through said connector first thread portion, said cutback second end between said connector first thread portion and said connector second sides; said connector cutback comprises a first end and a second end, said cutback first end extending through said connector first thread portion, said cutback second end between said connector first thread portion and said connector second sides; said connector cutback first distance longer than said connector cutback second distance; said connector cutback further configured to reduce a stiffness factor of at least a portion of said plurality of threads. Sugimura teaches among other benefits improved fatigue/failure resistance. It would have been obvious to one of ordinary skill in the art to employ a plurality of threads with a cutback, as taught by either Bonstein or Sugimura, to enhance the threaded connection of Snyder et al, by improving vibration resistance and/or fatigue resistance.

6. Claims 12-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nash (4,571,936) in view of Snyder et al (6,357,220) in view of any of Fredd (4,117,563), Bonstein (5,014,411) and Sugimura (4,958,973). Nash teach a gas turbine engine comprising a thrust link 200 (see col. 4, lines 32-38) where the link must absorb thrust loads, comprising a first connector 202, a second connector 204, and a span section extending therebetween, each said thrust link connector comprising a first side, a second side, and an opening extending 230, 232 therebetween and defined by an inner surface to receive threaded fastening members (col. 5, lines 19+). It is not clear whether the inner

surface is threaded. Snyder et al is applied as a teaching reference to show that it is old and well known to thread the inner surface of the fastening members of such mounting links (col. 4, lines 7+). It would have been obvious to one of ordinary skill in the art to make the inner surface threaded, as an old and well known type of connection used for links in gas turbine engines. Nash does not teach said plurality of threads comprising a cutback configured to reduce stresses induced into said plurality of threads. Fredd, Bonstein and Sugimura all teach connector openings with the claimed threaded connections, and for conciseness, their teachings are referred to above. It would have been obvious to one of ordinary skill in the art to employ the claimed cutbacks, as taught by any of Fredd, Bonstein and Sugimura, in order to facilitate an enhanced threaded connection, by enhancing mechanical integrity and/or to employing fewer threads and/or to improving vibration resistance and/or fatigue resistance.

Response to Arguments

7. Applicant's arguments filed 09/02/2004 have been fully considered but they are not persuasive. Applicant's arguments concerning the election/restriction are not persuasive as the examiner does deem there to be a serious burden.

8. Applicant's arguments of 09/02/2004 are deemed persuasive with respect to Corette and this rejection has been withdrawn.

9. Applicant's arguments are not persuasive with respect to the rest of the applied art. Applicant's arguments with respect to the claims argue the same central points, the common points being highlighted below.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

10. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation to combine can be found through even a superficial reading of the references. In each case, there is an express advantage taught by using a cutback region including enhancing mechanical integrity and/or to employing fewer threads (Fredd, e.g. col. 4, lines 25+) and/or to improving vibration resistance (Bonstein, e.g. col. 3, lines 41+)) and/or fatigue resistance (Sugimura).

11. Applicant further argues that the art teaches away from the combination. On the contrary, as posed above, express reasons for combination can be found in the references themselves.

12. Applicant's arguments concerning the Snyder combinations are not persuasive. The Examiner has clearly set forth the position that "Snyder et al teach a gas turbine engine comprising a thrust link 64 (note that link 64 will take on the thrust loads from the casing, alternately note that the link is a thrust link can be deemed a matter of intended use as there is no structure in the claims to differentiate the link from being a thrust link as opposed to any other type of link)." Applicant has failed to rebut this position only arguing what features Snyder does have explicitly stated.

13. Applicant limits his arguments to the thread chaser tool aspect of Fredd and ignores the resulting threaded connector shown interconnected (e.g. Figs. 2, 3, 4 and the female threads in Figs. 9 and 11) the male thread chaser tool is shown in Figs. 6-8, 10). Applicant selectively ignores the resulting joint (Fig. 4 in particular is very relevant). Applicant is reminded that the teachings of a reference are not limited to the preferred embodiment(s), but are applicable for what they fairly teach one of ordinary skill in the art, *In re Boe, 148 USPQ 507 (CCPA 1966).*

14. Further, with respect to Sugimura, applicant argues that In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e. Sugimura does not describe nor suggest a female threadform wherein the male threaded component is rotated within the female threadform to initially engage a first thread defined by the cutback) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification,

limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

15. Similarly, the arguments with respect to the Nash combinations are not persuasive for the same reasons set forth above.

16. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Ted Kim whose telephone number is 703-308-2631 until approximately November 22 at which point the telephone number will be 571-272-4829.

The Examiner can be reached on regular business hours before 5:00 pm, Monday to Thursday and every other Friday.

The fax numbers for the organization where this application is assigned are 703-872-9306 for Regular faxes and 703-872-9306 for After Final faxes.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl Tyler, can be reached on 703-306-2772.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist of Technology Center 3700, whose telephone number is 703-308-0861. General inquiries can also be directed to the Patents Assistance Center whose telephone number is 800-786-9199. Furthermore, a variety of online resources are available at http://www.uspto.gov/main/patents.htm

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